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INTELLIGENCE MEMORANDUM

SIGNIFICANT DEVELOPMENTS
IN THE PRODUCTION OF CHEMICAL FERTILIZERS
IN NORTH KOREA

CIA/RR IM-453

8 July 1957

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CIA/RR IM-453
(ORR Project 22.1797)

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SIGNIFICANT DEVELOPMENTS
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IN NORTH KOREA*

Summary

The chemical fertilizer industry of North Korea, a mainstay of the industrial economy, allegedly almost completely destroyed by UN bombings, has been rehabilitated to such a degree that production has greatly exceeded the goals of the Three Year Plan (1954-56). The rapid recovery of the industry is a direct result of the policy of the regime to subordinate other projects to the reconstruction of the fertilizer plants in order to fill the great need for fertilizers in North Korea.

1. Special Emphasis on the Industry.

The production of chemical fertilizers in North Korea has increased at such a remarkable pace that even the rapid expansion planned for the industry under the recently completed Three Year Plan has been greatly exceeded. Such an increase in production attests to the emphasis placed upon the restoration of the industry by high government officials and to the high priority assigned to the development of facilities for the production of chemical fertilizers under the program for reconstruction.

Before the Korean War the chemical industry of North Korea was among the foremost sectors of the industrial economy and included the largest single chemical complex in the Far East. After the war, in the initial stages of the program for reconstruction, it was felt that complete restoration of the chemical industry would not be possible by the end of 1956. A goal of partial rehabilitation of the plants

* The estimates and conclusions contained in this memorandum represent the best judgment of ORR as of 15 June 1957.

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producing chemical fertilizers was accepted, therefore, as the basic effort in the industry. It was also decided that most of the manpower and resources should be expended on the rehabilitation of these facilities, the output of which was very badly needed for agriculture. 1/* Because the chemical industry allegedly was almost completely destroyed by UN bombings, it was also believed at the beginning of the period of rehabilitation that it would be impossible to repair much of the major equipment, but this premise was found to be invalid in many instances. As a result of the unanticipated success in restoring the industry and the subsequent increased emphasis placed on this restoration by the regime, progress has been far more rapid than was originally envisaged in the Plan. 2/ Premier Kim Il-sung commented in March 1957 that he is "sure the fertilizer problem can be solved within one year," a conclusion which may be a bit presumptuous but which does indicate proximate self-sufficiency. 3/

Additional recognition of the paramount importance of chemical fertilizers in the program for reconstruction is indicated by the funds for investment which were allocated to this phase of the chemical industry under Three Year Plan. It has been reported that more than 5.2 billion won** of the 80.6 billion won invested in rehabilitation and reconstruction under the Three Year Plan went to the chemical industry. The main portion of the investment in the chemical industry, which amounted to 16 percent of the total investment for rehabilitation and reconstruction of heavy industry, was allocated to the development of facilities for the production of chemical fertilizers. The allocation of state funds for this purpose in 1956 was 30 percent above that in 1955. 4/ The results are impressive, as indicated by the repeated upward revision of the goals for the production of chemical fertilizers. The production of 195,000 metric tons*** of fertilizers under the Plan was 236 percent of the original goal of 82,600 tons. 5/

* For serially numbered source references, see the Appendix.

** On the basis of the evidence available, the rate of exchange tentatively accepted by CIA is 120 won to US \$1, but this figure is subject to a considerable range of error.

*** Tonnages are given in metric tons throughout this memorandum.

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By the end of the current Five Year Plan (1957-61), the total production of chemical fertilizers should increase to about 600,000 tons annually.* The figure of 600,000 tons is especially remarkable when compared with the original goal of 400,000 tons for 1961, which was established under the Five Year Plan, and with the peak production of 489,000 tons achieved in 1944 under the Japanese. 7/

2. Impressive Gains Through Foreign Aid.

Much of the success of the industry has been due to the extensive technical and material aid supplied by the USSR, Communist China, and other countries of the Sino-Soviet Bloc. The best illustration of the effectiveness of this foreign aid is the huge factory located at Hungnam. Financed largely by part of a grant of 1 billion rubles** from the USSR, the plant reportedly has been equipped with "the latest of modern machines instead of just being put back into its original condition." 8/ The program for reconstruction also includes the installation of safety devices and automatic equipment in order to increase the productivity of labor. 9/

Most of the output of the plant has been ammonium sulfate, an inexpensive fertilizer adapted to all crops and one well known to all Korean farmers. Production of ammonium sulfate was resumed in August 1955, and production was scheduled to reach almost 50,000 tons by the end of the Three Year Plan in 1956. The goal was achieved as early as March 1956, however, and the total production of 163,000 tons during 1954-56 was more than 337 percent of the original quota. 10/

3. Probable Significance of Rapid Development.

A number of factors account for efforts to increase the production of chemical fertilizers to record levels. Like other sectors of the economy, the chemical fertilizer industry has depended largely on a steady flow of foreign aid for its development, but recent reports in the North Korean press indicate a fear that such aid will soon

* The revised Plan calls for the production of at least 250,000 tons of ammonium sulfate, about 136,000 tons of calcium ammonium nitrate, about 150,000 tons of superphosphate of lime, about 55,000 to 65,000 tons of calcium cyanamide (including about 25,000 tons at Sunch'on), and a small amount of ammonium chloride. 6/

** The official rate of exchange of 4 rubles to US \$1 is not necessarily an accurate reflection of the dollar value.

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decrease. The Central Committee of the North Korean Communist Party stated recently that "although this aid still continues, we can no longer count too much upon it." 11/ Hence the North Koreans apparently want to restore and enlarge the chemical fertilizer industry before aid is curtailed.

This desire is probably reinforced by a closely related element in the economic problems of North Korea -- the need to find a new source of foreign currency to supplement the traditional source, nonferrous metals. Because of the lack of certain vitally important resources needed to develop the industrial economy, high officials have become concerned over the need for procurement and conservation of foreign currencies. It is probable that exports of chemical fertilizers soon will provide a significant source of foreign currency. 12/

In 1949, North Korea exported to the USSR more than 100,000 tons of chemical fertilizers, an amount which was equivalent to one-fourth of total production. In the period 1954-56, North Korea imported machines and fertilizers, and technicians were sent by the USSR. The current Five Year Plan of North Korea provides for the "creation of reserve capacities for the production of inorganic (chemical) fertilizers so that the rural economy's requirements can be fully satisfied... ." 13/ The eventual fulfillment of this Plan, which is quite realistic in view of recent successes and probable potential, will mean that part of the gap created by a decline in aid from the Sino-Soviet Bloc will be filled and that North Korea soon will become a net exporter of chemical fertilizers. Thus the country will be an asset rather than a liability in the trade in fertilizer of the Bloc.

Large quantities of chemical fertilizers are also needed within North Korea to increase the yield per hectare because the soil is generally acid, unfertile, and deficient in plant nutrients, such as phosphorous and nitrogen. Traditionally an area deficient in the production of food, North Korea apparently now can produce sufficient food to feed its population. This capability exists mainly because of a gradual increase in yields from farms and a significant decrease in the population since 1946. A further sizable increase in yields from farms may free manpower for the industrial sector of the economy and thus alleviate the shortage of labor. This shortage resulted from the division of Korea, which deprived North Korea of the human resources and the complementary economy of South Korea. While continuing the development of heavy industry, the regime apparently hopes to effect a transfer of labor from agriculture to industry by increasing the productivity of labor on farms by the extensive application of fertilizers, as well as by other means.

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Another factor which helps to explain the concentration of the North Korean regime on chemical fertilizers is the alternative uses of the ammonium nitrate plant now under construction at Hungnam. The full significance of the intensive effort to complete construction of this high-priority plant is yet obscure. Premier Kim Il-sung and other high-ranking officials have attached great urgency to the project, which is important because facilities for producing ammonium nitrate for fertilizer can be easily converted to produce a better grade of ammonium nitrate for high explosives. Construction of the plant, reportedly the first of its kind to be built in North Korea, is progressing ahead of schedule and at a faster rate than that achieved by either the USSR or Communist China on similar projects. The plant was reported to have been more than 60 percent completed in early March 1957 and now is scheduled for completion by the end of the year. 14/

The impressive successes of the industry under the Three Year Plan may indicate that the original goals were conservative and that there was some hesitancy to set higher goals which might not be achieved. The planners may also have considered the propaganda advantage to be gained by setting and subsequently surpassing even minimum targets. Evidence indicates, however, that the most probable explanation for the progress is that reconstruction proceeded more rapidly than expected and that the program received an additional emphasis that was not intended when the Plan commenced in 1954. To provide a solution to the fertilizer problem, the Plenum of the Party's Central Committee in December 1954 directed attention to the particular emphasis placed by the regime on the rehabilitation of chemical fertilizer plants. 15/ The emphasis placed upon chemical fertilizers in a speech by Premier Kim Il-sung during an inspection of factories in the Hungnam area in March 1957 is indicative of the determination of the regime to maintain the current rapid pace of development. Premier Kim Il-sung declared categorically:

The policy of the Party's Central Committee is to complete at all costs the rehabilitation of the fertilizer factory and the construction of the ammonium nitrate factory. "Subordinate everything to rehabilitation and construction of fertilizer plants!" is our slogan. 16/

Present indications are that goals established by the Five Year Plan probably will be reached before the completion of the Plan in 1961.

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APPENDIX

SOURCE REFERENCES

Evaluations, following the classification entry and designated "Eval.," have the following significance:

<u>Source of Information</u>	<u>Information</u>
Doc. - Documentary	1 - Confirmed by other sources
A - Completely reliable	2 - Probably true
B - Usually reliable	3 - Possibly true
C - Fairly reliable	4 - Doubtful
D - Not usually reliable	5 - Probably false
E - Not reliable	6 - Cannot be judged
F - Cannot be judged	

"Documentary" refers to original documents of foreign governments and organizations; copies or translations of such documents by a staff officer; or information extracted from such documents by a staff officer, all of which may carry the field evaluation "Documentary."

Evaluations not otherwise designated are those appearing on the cited document; those designated "RR" are by the author of this memorandum. No "RR" evaluation is given when the author agrees with the evaluation on the cited document.

All sources are evaluated RR 2.

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